Amendments to the Specification

Please amend paragraph [0029] as follows:

[0029] For ease of reference, reference numerals in the accompanying drawings typically are in the form "drawing number" followed by two digits, xx; for example, reference numerals on Figure 4 may be numbered 4xx; on Figure 5, reference numerals may be numbered 5xx, and so on. In certain cases, a reference numeral may be introduced on one drawing and the same reference numeral (with a different drawing number indicator) may be utilized on other drawings to refer to the same item. For example, the following reference numbers are used:

Reference Numbers	Element
405, 505	switching valve
106, 406, 506, 606, 706	chemical source (or process gas)
407, 507	switching valve
108, 408, 508, 608, 708	chemical source (or process gas)
409, 509	pressure controller
110, 410, 510, 610, 710, 810	chamber or reactor
411, 511	pressure controller
112, 412, 512, 612, 712, 812	heater assembly
114, 414, 514, 614, 714, 814	wafer
116, 416, 516, 616, 716	shut-off valve
117, 417, 517, 617, 717	controller
118, 418, 518, 618, 718	shut-off valve
119, 419, 519, 619, 719	controller
120, 420, 520, 620, 720	throttle valve
122, 422, 622, 722	feedback control system
124, 424, 524, 624, 724, 824	reactor purge pathway
126, 426, 526, 626, 726, 826	reactor purge pathway
128, 428, 528, 628, 728, 828	input or entrance to chamber
130, 430, 530, 630, 730, 830	pump
432, 532	pump
434, 534	valve

536, 736	conduit

Please amend paragraph [0051] as follows:

[0051] To achieve the multi-level purge methods described above, an ALD apparatus 400 having a second purge conduit that is introduced upstream of the chemical gas switching manifold and in parallel with the first purge conduit is provided. This arrangement (which may be termed a dual flow purge manifold ~~403~~) is illustrated in **Figure 4**. Both purge sources may be pressure controlled (e.g., using pressure controllers 409 and 411) with set points of pressure that can be widely different. Given the current state of the art, the pressure controllers 409 and 411 cannot be fast gas switched below several hundred milliseconds (however, future pressure controllers may allow for direct, fast electronic control). We avoid this shortcoming by passing the pressurized gas through fast switching pneumatic valves (with conductances determined by the conduit lines, elbows, valve and any restrictor components in the lines between the pressure ~~sources~~ controllers 409/411 down to and including the entrance 428 to the reactor 410). This implementation has each purge conduit leading to switching valves 405 and 407. These valves may be as fast (e.g., on the order of 20 msec) as are used for precursor injection valves 416 and 418.

Please amend paragraph [0064] as follows:

[0064] The reactor pressure for a reactor of very large conductance (compared with the conductances in line from ~~source~~ controller 642) placed in series between an upstream flow limiting conductance and downstream flow limiting conductance can be approximated by an expression for the chamber pressure:

$$P_{cham} \sim {}^{u}P \times [(1/{}^{d}C) / (1/{}^{d}C + 1/{}^{u}C)] \qquad (1),$$

where ${}^{u}P$ is the upstream pressure that may be set with a pressure controller, and ${}^{d}C$ and ${}^{u}C$ are the downstream and upstream conductances, respectively. The reciprocal conductances are proportional to the flow impedance, so at any constant flow the chamber pressure is just the ratio of pressure drop across the downstream impedance to the total impedance.